

CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the above-referenced application.

Listing of Claims:

1. (Previously presented) A method of handling writing new data, comprising:

 creating a journal entry that points to a first storage location containing old data to be replaced by the new data, wherein the journal entry is maintained after writing the new data;

 allocating new storage space having a second storage location; and
 writing the new data to the new storage space at the second storage location,
 wherein the old data is maintained in the first storage location after writing the new data to the new storage space at the second storage location.

2. (Original) A method, according to claim 1, wherein the storage space is provided by at least one storage device.

3. (Original) A method, according to claim 2, wherein allocating new storage space includes remapping a switch coupled to the at least one storage device.

4. (Original) A method, according to claim 3, wherein the new data is written by a host coupled to the switch.

5. (Original) A method, according to claim 4, wherein the switch presents the host with a logical storage area that is created by the switch mapping to different locations of the at least one storage device.
6. (Original) A method, according to claim 5, wherein the mapping is transparent to the host.
7. (Original) A method, according to claim 4, wherein the switch includes at least one processor and a corresponding memory.
8. (Original) A method, according to claim 7, wherein the journal entry is part of a journal that is stored in the memory.
9. (Original) A method, according to claim 1, wherein the storage space corresponds to a disk array storage device.
10. (Original) A method, according to claim 9, wherein the journal entry is stored in the disk array storage device.
11. (Original) A method, according to claim 9, wherein the journal entry is stored outside the disk array storage device.

12. (Original) A method, according to claim 11, wherein allocating new storage space includes remapping a switch coupled to the disk array storage device and wherein the journal entry is stored on the switch.
13. (Original) A method, according to claim 1, wherein each of the journal entries also includes a time stamp.
14. (Original) A method, according to claim 1, wherein each of the journal entries also includes a result of writing the data.
15. (Previously presented) Computer software, stored on a computer-readable medium, that handles writing new data, comprising:
 - executable code that creates a journal entry that points to a first storage location containing old data to be replaced by the new data, wherein the journal entry is maintained after writing the new data;
 - executable code that allocates new storage space having a second storage location; and
 - executable code that writes the new data to the new storage space at the second storage location, wherein the old data is maintained in the first storage location after writing the new data to the new storage space at the second storage location.

16. (Original) Computer software, according to claim 15, wherein the storage space is provided by at least one storage device and wherein executable code that allocates new storage space remaps a switch coupled to the at least one storage device.
17. (Original) Computer software, according to claim 16, wherein the journal entry is stored on the switch.
18. (Original) Computer software, according to claim 16, wherein the journal entry is stored at a location other than the switch.
19. (Original) Computer software, according to claim 15, further comprising: executable code that provides a time stamp to each journal entry.
20. (Original) Computer software, according to claim 15, further comprising: executable code that provides a result of writing the data to each journal entry.

21. (Previously presented) A method of restoring data to a storage device, comprising:

- accessing a journal having a plurality of entries, wherein each of the entries points to prior data that existed on the storage device before a write caused the entry to be created, wherein there is an entry in the journal for each data write to the storage device that occurred after an initial time, wherein the prior data corresponding to each of the plurality of entries in the journal is maintained in the storage device after each new data write after the initial time; and
- using each of the entries to remap the storage device to point to the prior data.

22. (Original) A method, according to claim 21, wherein each of the journal entries includes a time stamp.

23. (Original) A method, according to claim 22, wherein using each of the entries to remap the storage device includes remapping the one of the entries having a most recent time stamp.

24. (Original) A method, according to claim 21, wherein using each of the entries to remap the storage device includes changing in a map of a switch coupled to the storage device.

25. (Original) A method, according to claim 24, wherein the storage device is a logical storage device presented by the switch and wherein remapping includes modifying the relationship between the logical storage device and physical storage devices coupled to the switch.

26. (Original) A method, according to claim 25, wherein the physical storage devices are disk array storage devices.

27. (Original) A method, according to claim 24, wherein accessing the journal includes accessing a memory of the switch.

Claims 28 – 31 (Cancelled).

32. (Previously presented) A journal used for continuous backup of a storage device, comprising:

a first entry that points to a first storage location containing old data replaced by new data written to the storage device; and

a plurality of additional entries that point to respective additional storage locations containing old data replaced by new data written to the storage device, wherein for every write to the storage device that occurs after an initial time, there is a corresponding entry, and wherein the old data corresponding to each of the plurality of additional entries is maintained in the storage device after each new write to the storage device after the initial time.

33. (Original) A journal, according to claim 32, wherein each of the entries includes a time stamp.

34. (Original) A journal, according to claim 32, wherein each of the entries includes a result of writing the data.

35. (Cancelled)